AMENDMENTS TO CLAIMS:

Claims 1-36 were pending at the time of the Office Action.

Claims 1, 3-4, 12-13, 15, 21, 23-24, 28, 31-32, and 34-36 are amended.

Claims 1-36 remain pending.

1. (Currently Amended) A method in a data processing system having a plurality of nodes operatively connected to a network having a plurality of busses, the method comprising:

transmitting periodically a first message from one of the plurality of nodes to another of the nodes on a first of the plurality of busses of the network;

determining whether the first message was received by the other of the nodes on the first bus; and

when it is determined that the first message was not received by the other of the nodes, transmitting a recovery command to the other of the nodes on a second of the plurality of busses,

wherein the recovery command is configured to cause the other of the nodes to clear a latch-up error in a bus interface circuit that operatively connects the other of the nodes to the first bus, each node of the bus interface circuit including a physical layer controller that sends and receives data on one of the plurality of busses, and a link layer controller that encodes and decodes the data.

2. (Previously Presented) A method of claim 1, wherein the other of the nodes cycles power to the bus interface circuit operatively connecting the other node to the first bus in response to the recovery command.

3. (Currently Amended) A method of claim 2, wherein the ~~bus interface circuit includes at least one of a~~ link layer controller is further configured to handle frame synchronization for the data ~~or a physical layer controller~~.

4. (Currently Amended) A method of claim 2, wherein each node of the bus interface circuit is operatively connected to a data processing computer ~~includes a link layer controller and a physical layer controller~~.

5. (Original) A method of claim 1, wherein transmitting periodically the first message further comprises transmitting the first message on each of the plurality of busses.

6. (Original) A method of claim 1, wherein transmitting periodically the first message further comprises transmitting the first message from the one node to each of the other nodes.

7. (Original) A method of claim 1, wherein the nodes transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is one of the plurality of messages, and the first message is transmitted once in each frame.

8. (Original) A method of claim 1, wherein the nodes transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is at least one of the plurality of messages, each frame includes a plurality of minor frames, and the first message is transmitted once each minor frame.

9. (Previously Presented) A method of claim 1, further comprising sending a second message to the other of the nodes on the first bus if the first message is not received by the other of the nodes and determining whether the second message was received by the other of the nodes.

10. (Original) A method of claim 1, further comprising:

detecting a current surge in a bus interface circuit operatively connecting the one node to the first bus; and

cycling power to the bus interface circuit in response to detecting the current surge in the bus interface circuit.

11. (Original) A method of claim 1, wherein the second bus is a different type of bus than the first bus.

12. (Currently Amended) A method of claim 1, wherein the recovery command is configured to cause a bus interface circuit operatively connecting the other node to the first bus to be re-initialized by commanding a recovery circuit to at least one of inhibit a first current from the ~~a~~ physical layer controller of the bus interface circuit from reaching the ~~a~~ link layer controller of the bus interface circuit or inhibit a second current from the link layer controller from reaching the physical layer controller.

13. (Currently Amended) A data processing system, comprising:

a network having a plurality of busses;

a plurality of nodes operatively connected to the plurality of busses of the network;

means for transmitting periodically a first message from one of the plurality of nodes to another of the nodes on a first of the plurality of busses of the network;

means for determining whether the first message was received by the other of the nodes on the first bus; and

means for transmitting a recovery command associated with the first bus to the other of the nodes on a second of the plurality of busses in response to determining that the first message was not received by the other of the nodes,

wherein the other of the nodes comprises a bus interface circuit operatively connecting the other node to the first bus, the bus interface circuit including a physical layer controller that sends and receives data on one of the plurality of busses, and a link layer controller that encodes and decodes the data; and

a means for interrupting power to the bus interface circuit, ~~and~~ the means for interrupting power ~~is~~ configured to at least interrupt a current flow from the link layer controller to the physical layer controller in response to the recovery command.

14. (Previously Presented) A data processing system of claim 13, wherein the other of the nodes further comprises a means for receiving the recovery command, the means for receiving the recovery command configured to cause the means for interrupting power to interrupt current flow in response to the recovery command.

15. (Currently Amended) A data processing system of claim 14, wherein the other of the nodes further comprises:

means for detecting a current surge in the bus interface circuit operatively connecting the other node to the first bus; and

means for reporting the current surge in the bus interface circuit to the one node on the second bus.

16. (Original) A data processing system of claim 13, wherein the nodes are operatively configured to transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is one of the plurality of messages, and the first message is transmitted once in each frame.

17. (Original) A data processing system of claim 13, wherein the nodes are operatively configured to transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is one of the plurality of messages, each frame includes a plurality of minor frames, and the first message is transmitted once in each minor frame.

18. (Original) A data processing system of claim 13, wherein the one node comprises:

a bus interface circuit operatively connecting the one node to the first bus;

means for detecting a current surge in the bus interface circuit; and

means for cycling power to the bus interface circuit in response to detecting the current surge.

19. (Original) A data processing system of claim 13, wherein the second bus is a different type of bus than the first bus.

20. (Previously Presented) A data processing system of claim 13, wherein the means for interrupting power flow is further configured to interrupt a current flow from a power bus to the physical layer controller in response to the recovery command.

21. (Currently Amended) A computer-readable medium containing instructions causing a program in a data processing medium to perform a method, the data processing system having a plurality of nodes operatively connected to a network having a plurality of busses, the method comprising:

transmitting periodically a first message from one of the plurality of nodes to another of the nodes on a first of the plurality of busses of the network;

determining whether the first message was received by the other of the nodes on the first bus; and

when it is determined that the first message was not received by the other of the nodes, transmitting a recovery command associated with the first bus to the other of the nodes on a second of the plurality of busses,

wherein the recovery command is configured to cause the other of the nodes to clear a latch-up error in a bus interface circuit that operatively connects the other of the nodes to the first bus, each node of the bus interface circuit including a physical layer controller that sends and receives data on one of the plurality of busses, and a link layer controller that encodes and decodes the data.

22. (Previously Presented) A computer-readable medium of claim 21, wherein the other of the nodes cycles power to the bus interface circuit operatively connecting the other node to the first bus in response to the recovery command.

23. (Currently Amended) A computer-readable medium of claim 22, wherein the ~~a link layer controller or a~~ physical layer controller is further configured to initialize and arbitrate communication on the one of the plurality of busses.

24. (Currently Amended) A computer-readable medium of claim 22, wherein each node of the bus interface circuit is operatively connected to a data processing computer ~~includes a link layer controller and a physical layer controller~~.

25. (Original) A computer-readable medium of claim 21, wherein transmitting periodically the first message further comprises transmitting the first message from the one node to each of the other nodes.

26. (Original) A computer-readable medium of claim 21, wherein the nodes transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is one of the plurality of messages, and the first message is transmitted once in each frame.

27. (Original) A computer-readable medium of claim 21, wherein the nodes transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is one of the plurality of messages, each frame includes a plurality of minor frames, and the first message is transmitted once each minor frame.

28. (Currently Amended) A computer-readable medium of claim 21, further comprising:

detecting a current surge in a bus interface circuit operatively connecting the one node to the first bus~~, wherein the bus interface circuit includes a link layer controller and a physical layer controller~~; and

reinitializing a bus interface circuit in response to detecting the current surge by at least one of inhibiting a first current from the physical layer controller from reaching the link layer controller or inhibiting a second current from the link layer controller from reaching the physical layer controller.

29. (Original) A computer-readable medium of claim 21, wherein the second bus is a different type of bus than the first bus.

30. (Original) A computer-readable medium of claim 28, wherein the recovery command causes a bus interface circuit operatively connecting the other node to the first bus to be re-initialized.

31. (Currently Amended) A data processing apparatus, comprising:

a plurality of network interface cards operatively configured to connect to a network having a plurality of busses, each network interface card having a bus interface circuit operatively configured to connect to a respective one of the plurality of busses;

a memory having a program that periodically transmits a first message to at least one of a plurality of nodes operatively connected to a first of the plurality of busses of the network, determines whether the first message was received by the other of the nodes on the first bus, and transmits a recovery command associated with the first bus to the other of the nodes on a second of the plurality of busses in response to determining that the first message was not received by the other of the nodes,

wherein the recovery command is configured to cause the other of the nodes to reinitialize a bus interface circuit operatively connected to the other of the nodes to the first bus by commanding a means for interrupting power to at least interrupt a current flow from a power bus to a physical layer controller of the bus interface circuit in response to the recovery command, the physical layer controller to send and receive data, and initialize and arbitrate communication on the respective one of the plurality of busses; and

a processing unit for running the program.

32. (Currently Amended) A data processing apparatus of claim 31 ~~30~~, wherein the recovery command is further configured to cause the other of the nodes to reinitialize the bus interface circuit operatively connected to the other of the nodes to the first bus by commanding the means for interrupting power to interrupt current flow from a link layer controller of the bus interface circuit to the physical layer controller, the link layer controller to encode and decode the data.

33. (Original) A data processing apparatus of claim 31, wherein the second bus is of a different type than the first bus.

34. (Currently Amended) A data processing apparatus of claim 31 ~~30~~, wherein the first message is transmitted once per frame.

35. (Currently Amended) A data processing apparatus of claim 31 ~~30~~, wherein the nodes are operatively configured to transmit a plurality of messages in each of a plurality of frames on the first bus, the first message is one of the plurality of messages, each frame includes a plurality of minor frames, and the first message is transmitted once in each minor frame.

36. (Currently Amended) A data processing apparatus of claim 31 ~~30~~, the method further comprising:

detecting a current surge in the bus interface circuit of one of the network interface cards; and

cycling power to the bus interface circuit of the one network interface card in response to detecting the current surge.